

CLAIMS:

1. A stent assembly comprising a stent, the stent having a proximal end and a distal end and being configurable between an unexpanded state and an expanded state, the stent comprising:
 - 5 a first stent backbone which extends from the proximal end of the stent to the distal end of the stent, the first stent back bone being oriented in a direction which is substantially parallel to a longitudinal axis of the stent; and
 - a plurality of interconnected first stent members and second stent members, each of the first stent members being oriented in a substantially longitudinal direction in the unexpanded state and the expanded state, each of the second stent members being oriented in a substantially longitudinal direction in the unexpanded state and being oriented in a substantially circumferential direction in the expanded state,
 - 10 the first stent backbone having a greater column strength than the plurality of interconnected stent members.
- 15 2. The assembly of claim 1 wherein the first stent backbone is comprised of a plurality of first stent members.
3. The assembly of claim 1 wherein the first stent backbone has a predetermined thickness and each of the plurality of interconnected first stent members and second stent members have a predetermined thickness, the predetermined thickness of the first stent backbone being greater than the predetermined thickness of each of the plurality of interconnected first stent members and second stent members.
- 20 5. The assembly of claim 1 wherein further comprising a second stent backbone, at least a portion of the second stent backbone being substantially parallel to the longitudinal axis of the stent in the unexpanded state and the expanded state.
- 25 6. The assembly of claim 5 wherein the second backbone is comprised of a plurality of first stent members.
7. The assembly of claim 5 wherein the second backbone is comprised of at least two longitudinally adjacent first stent members.
8. The assembly of claim 7 wherein at least a portion of each of the longitudinally adjacent first stent members are spaced apart from one another.
- 30 9. The assembly of claim 1 further comprising a push wire, the push wire having a proximal end and a distal end, the distal end of the push wire being removeably engaged

to a proximal end of the stent, the first backbone extending from the distal end of the push wire.

10. The assembly of claim 9 wherein the push wire is a thermally conductive.

11. The assembly of claim 9 wherein the push wire is electrically conductive.

5 12. The assembly of claim 9 wherein the push wire is removeably engaged to the stent at a severable junction, the stent being released from the push wire when the severable junction is severed.

13. The assembly of claim 9 wherein at least a portion of the severable junction is bioabsorbable, the stent being released from the push wire when the at least a portion of
10 the severable junction is bioabsorbed.

14. The assembly of claim 12 wherein the severable junction is constructed and arranged to be severable by at least one mechanism selected from the group consisting of: electrolytic corrosion, mechanical actuation, application of hydraulic pressure, application of thermal energy, application of electromagnetic energy and any
15 combination thereof.

15. The assembly of claim 9 comprising a predeployed configuration, an initially deployed configuration and a fully deployed configuration, in the predeployed configuration the stent in the unexpanded state being in mechanical communication with the push wire, in the initially deployed configuration the stent in the expanded state is in
20 mechanical communication with the push wire, in the deployed configuration the stent in the expanded state is mechanically independent from the push wire.

16. The assembly of claim 15 wherein the assembly is constructed and arranged to be configurable from the predeployed configuration to the initially deployed configuration and from the initially deployed configuration to the fully deployed
25 configuration.

17. The assembly of claim 16 wherein the assembly is constructed and arranged to be configurable from the initially deployed configuration to the predeployed configuration.

18. The assembly of claim 17 further comprising a catheter, the catheter comprising
30 a catheter shaft, the catheter shaft defining a lumen, the shaft further defining an opening at a distal end of the catheter, in the predeployed configuration the stent and push wire being moveably contained within the lumen.

19. The assembly of claim 18 wherein in the initially deployed configuration at least a portion of the push wire is and the stent are free of the lumen.
20. The assembly of claim 19 wherein when the assembly is configured from the predeployed configuration to the initially deployed configuration at least a portion of the push wire and the stent are advanced through the opening at the distal end of the catheter.
21. The assembly of claim 1 wherein the stent is a therapeutic coated stent.
22. The assembly of claim 1 wherein the stent is at least partially constructed of a shape memory material.
23. The assembly of claim 1 wherein the stent is at least partially constructed of nitinol.
24. The assembly of claim 1 wherein the first back bone is at least one wire.
25. The assembly of claim 1 wherein the plurality of interconnected first stent members and second stent members comprise at least one wire.
26. The assembly of claim 3 wherein the stent is at least partially constructed from a tube of stent material.
27. The assembly of claim 1 wherein adjacent interconnected first stent members and second stent members form closed loops.
28. The assembly of claim 1 wherein at least one of the plurality of interconnected first stent members and second stent members comprise at least one substantially curved portion.
29. The assembly of claim 1 wherein at least one of the plurality of interconnected first stent members and second stent members comprise at least one substantially straight portion.
30. The assembly of claim 1 wherein the first back bone comprises at least one substantially curved portion.
31. The assembly of claim 1 wherein the first back bone comprises at least one substantially straight portion.
32. The assembly of claim 5 wherein the second back bone comprises at least one substantially curved portion.
33. The assembly of claim 5 wherein the second back bone comprises at least one substantially straight portion.

34. The assembly of claim 1 wherein the stent is at least partially radiopaque.

35. The assembly of claim 1 wherein at least a portion of the push wire is radiopaque.

36. The assembly of claim 12 wherein the severable junction is at least partially radiopaque.

37. The assembly of claim 1 further comprising at least one radiopaque marker the at least one radiopaque marker being engaged to at least one of the push wire, the first back bone, at least one of the first stent member, and at least one second stent member.

38. The assembly of claim 37 wherein the at least one radiopaque marker comprises a plurality of radiopaque markers.

39. The assembly of claim 5 wherein the first back bone comprises a proximal end and a distal end and the second back bone comprises a proximal end and a distal end, in the unexpanded state the proximal end of the first back bone and the proximal end of the second backbone are longitudinally and circumferentially offset and the distal end of the first back bone and the distal end of the second backbone are longitudinally and circumferentially offset.

40. The assembly of claim 39 wherein in the expanded state the proximal end of the first back bone and the proximal end of the second backbone are longitudinally and circumferentially offset and the distal end of the first back bone and the distal end of the second backbone are longitudinally and circumferentially offset.

41. The assembly of claim 3 wherein the stent is at least partially constructed from a tube of stent material.

42. The assembly of claim 41 wherein the stent is constructed by a method comprising the following steps:

- 25 providing a tube of stent material;
- cutting a predetermined pattern into the tube of stent material, the predetermined pattern including the first back bone and the plurality of interconnected first stent members and second stent members;
- masking an area of the tube of stent material corresponding the position
- 30 of the first back bone;
- removing a predetermined amount of material from at least one area of the stent that is not masked.

43. The assembly of claim 42 wherein the step of removing the predetermined amount of material from at least one area of the stent that is not masked further comprises the step of:

5 providing the predetermined thickness of the first stent backbone and the predetermined thickness of each of the plurality of interconnected first stent members and second stent members by microblasting the at least one area of the stent that is not masked.

44. The assembly of claim 42 wherein the step of removing the predetermined amount of material from at least one area of the stent that is not masked further

10 comprises the step of:

providing the predetermined thickness of the first stent backbone and the predetermined thickness of each of the plurality of interconnected first stent members and second stent members by electropolishing the at least one area of the stent that is not masked.

15 45. The assembly of claim 18 wherein at least a portion of the catheter is at least partially radiopaque.

46. The assembly of claim 45 further comprising at least one radiopaque marker, the at least one radiopaque marker being adjacent to the distal end of the catheter.